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ABSTRACT

The need for a new function in education, that of the knowledge linker, is advanced. The need for a linker is explained in terms of a presumed gap between the researcher and the practitioner. The linker's suggested role in ascertaining the practitioner's needs and translating the researcher's findings is outlined. Various problems with the concept are raised and reviewed. Six types of tools necessary for the function are outlined, and techniques for providing a two-way feedback are proposed. (SK)

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A STATEMENT OF NEED--THE KNOWLEDGE LINKER IN EDUCATION*

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The field of education today is faced with a serious dilemma: how to harness the output of the knowledge explosion so that this knowledge can be utilized to solve the demands being placed upon the education system. In 1964, Richard Carlson cited a weak knowledge base as one of the main problems in education.1 Today, there is not a lack of available knowledge as exemplified by the ERIC information system. But there is a lack of utilization of educational research and successful practices which does tend to support Carlson's concept of a weak knowledge base.

The main reason for the lack of knowledge utilization in education is the gap which exists in the system of knowledge transfer. This proposal is premised on the need in elementary and secondary education for an institutionalized knowledge linker role which should be independent of the research and practice worlds.

PROBLEM

The process of knowledge transfer within the knowledge utilization system is inadequate due to this anonymity between developer and practitioner. Since the developer's function is to supply the practitioner with a working model for solving the consumer's problems, it is necessary to have the developer and the practitioner to be linked together so that communication can occur more directly.

The federal government has attempted to alleviate this lack of contact by instituting the R&D Centers. However, these have not solved the problem as noted by Harriet Feinberg in an evaluation of the R&D Center at Harvard.

> In the foreground, overshadowing any other problems is a large and obvious gap between the University (Harvard) and the participating school systems. Harvard Graduate School of Education appears withdrawn, highly research oriented as opposed to service oriented, and unresponsive to the everyday needs and problems of the school systems. The conventional research-development-dissemination model suggested by the Office of Education's description of the R&D Centers, whereby the results of basic research are transmitted into curriculum development, and eventually disseminated to school systems, is seriously questioned if not rejected.2

*Edited and condensed from a proposal submitted to the U. S. Office of Education by the staff of the Merrimack Education Center, 101 Mill Road, Chelmsford, Massachusetts, under the direction of Richard J. Lavin, Ed.D., 1971.

IR 001 483

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Attempts have been made to make research available to practitioners via the printed word, but most have failed as noted in a study by Lazarsfield and Sieber in which they found that only a small percentage of teachers read publications which contain research results.[3] The federal government has attempted to disseminate new knowledge to school personnel through the ERIC information system, however this program has not been utilized by educators as noted by Guba and Horvat.[4]

The result of this breakdown in the communication process between developers and practitioners has resulted in the lack of research utilization by school personnel as described by Carlson earlier in this paper and by Lazarsfield and Sieber in the following comment:

> Many teachers have little or no knowledge of the research that has been done in their field and are unaware that there are practical findings that could be applied to everyday work.[5]

The lack of utilization is compounded by the fact that even when a practitioner does know about research or has used it, the knowledge is not transferred even within the same school system as Coombs has observed:

> Even when research is undertaken in the setting of the local school, often the results are not transported even to neighboring systems.[6]
>
> School systems are seriously deficient in transmission processes for new and improved ways of working. Hundreds of successful classroom innovations are born to bloom unseen. Some get into journal articles, conversational reports, or books - but many are unknown even to other teachers in the same building.[7]

The problem is evident: how can we increase the utilization of research based knowledge by school personnel? This does not infer a forcing of research upon the practitioners but instead provides them with research results and successful practices which will enable them to evaluate their present situation and to determine if these new findings can help them to improve the learning of the consumers. The problem can be divided into subparts as follows:

1. Reduce the anonymity between developer and practitioner.
2. Target information to specific practitioner needs.
3. Increase the communication of research findings and successful practices between local practitioners.

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Attempts to solve the above problem have not been successful in the past as noted earlier in this paper. New mechanisms or agencies are needed to bridge this gap in knowledge utilization.

The knowledge linker must assume an active role between the developer and the practitioner. He must go to the practitioner and discover what types of information are required. Then he must turn to the resource systems, which could be developers or other practitioners, and determine what information is available to meet these needs. Many times the information is not available in which case the linker can serve as an intermediary in a two step feedback channel to provide the developer with guidance for further research work.

There are three fundamental requirements that the linker must possess. These have been inferred in the writings of Havelock[8] and Lippitt[9] who are both located at the Center for Research on the Utilization of Scientific Knowledge (CRUSK) at the University of Michigan. First, the linker must be able to help the practitioner assess his needs. Before the practitioner can use information he must know specifically what his problems are. Second, he must have a knowledge of the resources which are available to solve the educational practitioner's problems. This will include not only the human resources of developers, consultants, and other practitioners but also printed resources in the form of research, successful practices, training programs, etc. Third, the linker must have access to these resources so that they can be made available to the practitioner. There may be nothing more frustrating to the practitioner than to know what his needs are, know what type of resources he needs, and then not be able to get them. These three requirements appear quite simple but as Havelock points out if the practitioner was able to perform all three of these activities himself he would not need a linker.[10]

There are several difficulties inherent in performing the knowledge linker role. These can be classified as follows:

1. Overload

2. Marginality

Overload can best be described as too much information to handle, too many people to get it from, too much processing to be done before it is useful, and too many people to give it to.[11] Marginality refers to the in-betweener position of the linker and the lack of precedence for the new role of "knowledge linker".

These two problems make it nearly impossible for an individual to fulfill the linker role. Farr states the following:

> What is obvious, however, is that educational linking cannot possibly be done by individuals alone but requires the resources and legitimacy of a rather comprehensive organization.[12]

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The institutionalization of the linker role is not a panacea; however, it does provide the linkers within the institution with the following:

1. economic security due to the permanence of the institution
2. identity which reduces the marginality problem and may give the individual a feeling of being worthwhile
3. coordination so that the individual can specialize on only a few tasks but yet allow the multiple functions of the linking role to be accomplished, i.e., reduces the overload problem.

Farr argues for an impartial middleman since he believes the developer and practitioner are hindered in performing their roles as developers and as teachers and also decrease their effectiveness as linkers if they attempt to fill the role. The impartial no axe-to-grind middleman is able to maintain a certain trustworthiness and credibility attainable by no one else.[13] Havelock sums it up as follows:

> This linking institution could be based in a university or a school system but neither of these alternatives is entirely satisfactory. An independent base not identified with either the research world or the practice world is probably preferable. In any case, the institution will be expensive to operate if it is to be an effective linker and will, therefore, require federal support.[14]

The training required to prepare linking agents must include conceptual frameworks and specific skills which are aimed at satisfying the requirements of a linking agent as mentioned earlier in this paper. First, the individual must understand the framework of the knowledge utilization system and the types of processes that occur. The linker must also realize the inherent problems involved with the linker role and realize the need for a coordination of linker efforts to accomplish the task of bringing together practitioners and resources to meet the needs of the consumer. The individual must also develop diagnostic and facilitating skills to assist the practitioner in assessing his needs. Such skills would include how to ask the right questions and how to collect, process, and interpret data.

The linker must also know what types of resources are available and how to link these to the practitioner. To access such information he should understand knowledge storage and retrieval methods as well as where human resources are located (see Lippitt for a more detailed description of possible curriculum[15]).

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- Havelock suggests six types of tools which the agent should possess:

  1. Linking strategies or project designs
  2. Handbook of new practices, innovations, and usable research knowledge
  3. Handbook on linking problems and solutions
  4. Guide to the retrieval of knowledge
  5. Simple instruments to measure the success of his dissemination and utilization efforts
  6. Client self-diagnostic tools[16]

The knowledge linker organization staffed with these trained and equipped personnel will be able to work with a large number of practitioners from different school systems. In assisting the practitioners to assess their needs, a number of common needs will be recognized by the linkers. When the practitioners are made aware of this commonality, they may wish to form inter school system teams to develop programs for fulfilling the needs. The independent linking organization will be in an excellent position to facilitate the exchange of resources not only between developers and practitioners but also between practitioners. By working on a cooperative basis the school systems will also be able to solve the problems more economically than if they were working separately due to the sharing of resources in the designing and operation of programs. This cooperative effort to meet common needs between school systems is possible as shown by some of the exemplary Title III Centers in operation.

As noted earlier, an important function of the knowledge linkers will be the targeting of selective information to the practitioners which will require an active linker role. The key to the selective dissemination of information (SDI) is the matching of individual practitioner needs with specific information to meet these needs. The linker must continually search all available information sources in order to provide this match. This can be greatly facilitated by the use of computers but is also possible on a manual basis even though it is more time consuming. A regular program must be instituted to (1) monitor practitioner needs, (2) send the appropriate information to the practitioner, and (3) receive feedback as to the usefulness of the information in meeting the needs. The feedback from the practitioner is essential because it enables the linker to realize not only whether the practitioner has correctly identified his problem but also how the needs are changing.

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10. Havelock, op. cit , p. 7:21.

11. Ibid., p. 7:34.

12. Farr, Richard, "Knowledge Linkers and the Flow of Educational Information," An Occasional Paper from ERIC at Stanford, Stanford University: ERIC Clearinghouse on Educational Media and Technology, 1969, p. 7.

13. Ibid., p. 4.

14. Havelock, op. cit., p. 7:38.

15. Lippitt, Ronald; Watson, Jeanne; and Westley, Bruce, The Dynamics of Planned Change, New York: Harcourt, Brace and Company, Inc., 1958, p. 312.

16. Havelock, op. cit., pp. 7:39 - 7:40.